from said selected portion of internal annular surface, and (d) passing a current through said electrode, said bath, and said rotor sufficient to form a hard ceramic coating on the surface of said selected internal annular surface.

22. (New) Method of forming a hard ceramic surface on a selected portion of the internal annular surface of a spinning rotor cup comprising (a) placing said spinning rotor cup in an electrolyte bath containing ingredients capable of forming a hard ceramic surface by electrolysis, ***said ingredients including about 2 to about 15 grams per liter of sodium silicate of the formula $Na_2O \cdot xSiO_2$ (x=>2.55 by weight),*** (b) connecting said spinning rotor cup to a source of electric current (c) placing an electrode inside said spinning rotor cup, said electrode being shaped and placed to provide a peripheral terminus substantially peripherally equidistant from said selected portion of internal annular surface, and (d) passing a current through said electrode, said bath, and said rotor sufficient to form a hard ceramic coating on the surface of said selected internal annular surface.

Remarks

Section 103(a) has been applied against claims 1-6, 8, and 11-13, the Examiner combining the Samsonov patent 5,616,229 and Ball et al 5,644,910. It is believed the above amendments obviate all of the rejections because they are based on the observation of allowable subject matter made by the Examiner in his paragraph 9.

Most notably, claim 1 has been amended to include the silicate specified in claim 7 (see Examiner's paragraph 10), and claim 14 has been replaced by new claim 22, which also specifies the silicate formulation. The salient element of claim 9, where the surface acted on is a collection groove, is now incorporated into independent claim 8, while the downwardly oriented peripheral flange of claim 10 now appears in new independent claim 21. Claim 21 is based on claim 8 and is shown with the element of former claim 10 in italics; likewise, for the convenience of the Examiner, the italics in claim 22 represent the salient element of claim 14, the sodium silicate.

As the application now includes a fourth independent claim, a check in the amount of $43 is attached hereto.

All of the claims recite allowable subject matter and accordingly it is respectfully proposed that the rejections be withdrawn and the case be passed to issue.

Present status of the claims is shown in the appended sheets.

Respectfully submitted,

William L. Krayer

Certification under 37CFR1.10
(Express Mail)

Express Mail Mailing Number: **ER 489534203 US**
Date of Deposit: **October 17, 2003**

I hereby certify that the application/correspondence attached hereto is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37CFR1.10 on the date indicated above and is addressed to Mail Stop: - - -, Commissioner for Patents, PO Box 1450, Alexandria VA 22313-1450.

	William L. Krayer
Signature of person mailing correspondence	Person Mailing Correspondence

1. (Currently Amended) Method of making a wear-resistant spinning rotor cup comprising forming a hard coating on an interior surface of an incipient spinning rotor cup by (i) immersing said incipient spinning rotor in an electrolytic bath comprising a passivating agent and an electrolytic agent, wherein said passivating agent comprises a colloidal suspension of sodium silicate in the form $Na_2O \cdot xSiO_2$ (x=>2.55 by weight), and (ii) passing a modified shaped-wave alternating electric current from a source of 250 to 800 volts through said interior surface of said incipient spinning rotor, wherein said modified shaped-wave electric current rises from zero to its maximum height and falls to below 40% of its maximum height within less than a quarter of a full alternating cycle thereby causing dielectric breakdown and the formation of a ceramic coating on said interior surface, and removing said incipient spinning rotor cup from said electrolytic bath.
2. (Original) Method of claim 1 wherein said current is passed through an electrode positioned within said incipient spinning rotor cup to cause said formation of a ceramic coating on at least one selected portion of said interior surface.
3. (Original) Method of claim 2 wherein said electrode has a peripheral terminus and is positioned centrally within said incipient spinning rotor cup so that said terminus is peripherally substantially equidistant from said at least one selected portion of said interior surface of said incipient spinning rotor cup.
4. (Original) Method of claim 1 wherein said passivating agent comprises a colloidal silicate.
5. (Original) Method of claim 1 wherein said electrolytic agent comprises an alkali metal hydroxide.
6. (Original) Method of claim 1 wherein said incipient spinning rotor cup has an aluminum surface.
7. (Currently Amended) Method of claim 1 wherein said passivating agent is ~~[a colloidal suspension of sodium silicate in the form $Na_2O \cdot xSiO_2$ (x=>2.55 by weight)]~~ at a concentration of 2.0-9.5 grams per liter of said bath, said electrolytic agent is an alkali metal hydroxide, and said spinning rotor cup has an aluminum surface.
8. (Currently Amended) Method of forming a hard ceramic surface on ~~[a selected]~~ at least a portion of the ~~[internal annular]~~ surface of a collection groove of a spinning rotor cup comprising (a)

placing said spinning rotor cup in an electrolyte bath containing ingredients capable of forming a hard ceramic surface by electrolysis (b) connecting said spinning rotor cup to a source of electric current (c) placing an electrode inside said spinning rotor cup, said electrode being shaped and placed to provide a peripheral terminus substantially peripherally equidistant from said ~~[selected]~~ portion of ~~[internal annular surface]~~ said collection groove surface, and (d) passing a current through said electrode, said bath, and said rotor sufficient to form a hard ceramic coating on ~~[the]~~ said portion of said surface of said ~~[selected internal annular]~~ collection groove surface.

9. (Canceled)

10. (Canceled)

11. (Original) Method of claim 8 wherein said current is a modified shaped-wave alternating current.

12. (Original) Method of claim 8 wherein said incipient spinning rotor cup has an aluminum surface.

13. (Original) Method of claim 8 wherein said electrolytic agent is an alkali metal hydroxide present in a concentration of 0.5 to 2 grams/liter.

14. (Canceled) Method of claim 8 wherein said passivating agent comprises about 2 to about 15 grams per liter of sodium silicate of the formula $Na_2O \cdot xSiO_2$ (x=>2.55 by weight).

15. (Withdrawn) A spinning rotor cup made by the method of claim 1.

16. (Withdrawn) A spinning rotor cup made by the method of claim 8.

17. (Withdrawn) A spinning rotor cup having a surface hardness of greater than 1000 Kn_{100}.

18. (Withdrawn) A spinning rotor cup of claim 17 having a hardness of at least 1300, Kn_{100}.

19. (Withdrawn) A spinning rotor cup of claim 17 having a body selected from aluminum, titanium, magnesium, beryllium, hafnium, zirconium, or alloys thereof.

20. (Withdrawn) An electrode useful in forming a hard ceramic coating on a spinning rotor cup comprising a terminal for connecting to an electric circuit, and a substantially circular, downwardly projecting peripheral terminus.

21. (New) Method of forming a hard ceramic surface on a selected portion of the internal annular surface of a spinning rotor cup comprising (a) placing said spinning rotor cup in an electrolyte bath containing ingredients capable of forming a hard ceramic surface by electrolysis (b) connecting said spinning rotor cup to a source of electric current (c) placing an electrode inside said

spinning rotor cup, said electrode comprising a body and a downwardly oriented peripheral flange and being shaped and placed to provide a peripheral terminus substantially peripherally equidistant from said selected portion of internal annular surface, and (d) passing a current through said electrode, said bath, and said rotor sufficient to form a hard ceramic coating on the surface of said selected internal annular surface.

22. (New) Method of forming a hard ceramic surface on a selected portion of the internal annular surface of a spinning rotor cup comprising (a) placing said spinning rotor cup in an electrolyte bath containing ingredients capable of forming a hard ceramic surface by electrolysis, said ingredients including about 2 to about 15 grams per liter of sodium silicate of the formula $Na_2O \cdot xSiO_2$ (x=>2.55 by weight), (b) connecting said spinning rotor cup to a source of electric current (c) placing an electrode inside said spinning rotor cup, said electrode being shaped and placed to provide a peripheral terminus substantially peripherally equidistant from said selected portion of internal annular surface, and (d) passing a current through said electrode, said bath, and said rotor sufficient to form a hard ceramic coating on the surface of said selected internal annular surface.